

IN THE CLAIMS

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

What is claimed is:

1. (Currently Amended) An apparatus for detection of contact erosion on switching contacts (K_1, K_1') in an electrical switching device, (S) ~~with~~ the contact erosion being produced on at least one opening and closing switching contact pair (K_1, K_1') in the switching device, the apparatus comprising:
~~____~~ (S) ~~having~~ at least one optical waveguide; (LWL) and
~~____~~ at least one detector (D) , ~~in which case~~wherein light which originates from at least one light source (Q) ~~can be is~~ injected injectable into the at least one optical waveguide (LWL) and can be passedable from the optical waveguide (LWL) to the at least one detector (D) ,
~~characterized in that~~
the at least one optical waveguide (LWL) is being arranged with respect to the at least one switching contact pair (K_1, K_1') such that ~~the~~ intensity, \rightarrow as measured by the at least one detector, (D) of ~~the~~ light when ~~which is~~ injected into the at least one optical waveguide (LWL) decreases as the number of contact erosion particles ~~which are~~ produced by the contact erosion in the electrical switching device (S) increases.
2. (Currently Amended) The apparatus as claimed in claim 1, ~~characterized in that~~wherein
the at least one light source (Q) is the an arc ~~which is~~ produced by the opening and closing switching contact pair (K_1, K_1') .

3. (Currently Amended) The apparatus as claimed in claim 1
~~or 2,~~

~~characterized in that, wherein~~

~~the at least one light source (Q) is at least one light-emitting diode which, together with the at least one optical waveguide (LWL), forms a light barrier (LS).~~

4. (Currently Amended) The apparatus as claimed in claim 1,
~~wherein or 2,~~

~~characterized in that~~

the at least one light source (Q) is a further optical waveguide (LWLQ).

5. (Currently Amended) The apparatus as claimed in claim 4,

~~characterized in that~~wherein

~~the light from the further optical waveguide (LWLQ) is adapted to~~ emerges on one of its end faces, and this end face together with the at least one optical waveguide (LWL) forms a light barrier (LS).

6. (Currently Amended) The apparatus as claimed in claim 4,

~~characterized in that~~wherein

~~the light from the further optical waveguide (LWLQ) is adapted to~~ emerges radially over its length.

7. (Currently Amended) The apparatus as claimed in ~~one of~~
~~claims 1 to 6,~~

~~characterized in that~~claim 1, further comprising:

~~a plate, (P) is arranged between the light source (Q) and the at least one optical waveguide (LWL), has including a transmission level for the light originating from the light source (Q), and is the plate being arranged with respect to the at least one switching contact pair (K1, K1') such that contact erosion particles are deposited on the plate (P), with~~

the transmission level decreasing as the number of contact erosion particles increases.

8. (Currently Amended) The apparatus as claimed in ~~one of the preceding claims 1 to 7,~~
~~characterized in that~~claim 1, wherein
one switching contact pair of a multipole switching device (S) ~~has~~includes an associated optical waveguide (LWL1, LWL2, LWL3), ~~with~~the ~~associated~~ optical waveguide (LWL1, LWL2, LWL3) ~~being~~ arranged with respect to the associated switching contact pair such that the measured intensity ~~(as measured by a detector (D))~~ of the light ~~which is when~~ injected via the optical waveguide (LWL1, LWL2, LWL3) is a measure for the contact erosion of the associated switching contact pair.

9. (Currently Amended) The apparatus as claimed in ~~one of claims 1 to 8,~~
~~characterized in that~~claim 1, wherein
the detector (D) ~~is~~ adapted to transmits a signal, which corresponds to the measured intensity, to a tripping unit (A), and ~~this~~ the tripping unit (A) ~~is~~ adapted to controls the switching device (S) as a function of the signal.

10. (Currently Amended) The apparatus as claimed in ~~one of claims 1 to 9,~~
~~characterized in that~~claim 1, wherein
the measured intensity ~~(as measured by the detector (D))~~ is adapted to be transmitted via ~~means for communication~~, for further evaluation.

11. (Currently Amended) An electrical switching device ~~having comprising~~ an apparatus as claimed in ~~one of claims 1 to 10,~~
wherein
~~characterized in that~~

the electrical switching device ~~(S)~~ is at least one of a low-voltage circuit breaker ~~or~~and a contactor.

12. (New) The apparatus as claimed in claim 1, wherein the at least one light source includes an arc produced by the opening and closing switching contact pair.

13. (New) The apparatus as claimed in claim 1, wherein the at least one light source includes at least one light-emitting diode which, together with the at least one optical waveguide, forms a light barrier.

14. (New) The apparatus as claimed in claim 12, wherein the at least one light source includes at least one light-emitting diode which, together with the at least one optical waveguide, forms a light barrier.

15. (New) The apparatus as claimed in claim 1, wherein the at least one light source includes a further optical waveguide.

16. (New) The apparatus as claimed in claim 12, wherein the at least one light source includes a further optical waveguide.

17. (New) The apparatus as claimed in claim 14, wherein the at least one light source includes a further optical waveguide.

18. (New) The apparatus as claimed in claim 15, wherein the light from the further optical waveguide is adapted to emerge on one of its end faces, and this end face together with the at least one optical waveguide forms a light barrier.

19. (New) The apparatus as claimed in claim 15, wherein the light from the further optical waveguide is adapted to emerge radially over its length.

20. (New) The apparatus as claimed in claim 2, further comprising:

a plate, arranged between the light source and the at least one optical waveguide, including a transmission level for the light originating from the light source, is the plate being arranged with respect to the at least one switching contact pair such that contact erosion particles are deposited on the plate, with the transmission level decreasing as the number of contact erosion particles increases.

21. (New) An apparatus for detection of contact erosion on switching contacts in an electrical switching device, the apparatus comprising:

means for optically channeling light from at least one light source; and

means for detecting contact erosion by measuring intensity of the channeled light, the means for optically channeling light being arranged with respect to the at least one switching contact pair such that the measured intensity of light decreases as a number of contact erosion particles produced by contact erosion in the electrical switching device increases.

22. (New) The apparatus as claimed in claim 21, wherein the at least one light source includes an arc produced by the opening and closing switching contact pair.

23. (New) The apparatus as claimed in claim 21, wherein the means for optically channeling light includes at least one optical waveguide, and the at least one light source includes

at least one light-emitting diode which, together with the at least one optical waveguide, forms a light barrier.

24. (New) The apparatus as claimed in claim 21, wherein the means for optically channeling light includes at least one optical waveguide, and wherein the at least one light source includes a further optical waveguide.